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ABSTRACT

Teachers in a middle school using the Strategic Teaching and Reading Project, a nationally recognized research-based model for educational change, were asked to reflect on their own teaching practices and experiences with the five global strategies of: metacognition, prior knowledge, inference, word meaning, and text structure. The instructional plan involved teaching all five learning strategies in each content area while each department highlighted one learning strategy monthly on a rotating basis throughout the year. The Strategic Teaching and Reading Project assist teachers to become strategic facilitators of the learning process. Findings to this point indicate that the teachers have become more effective in their teaching practices. They have reconsidered their ways of delivering course content, recognized their strengths and weaknesses, become more aware of the ways the five strategies can be implemented, developed a cognitive framework to outline their lesson plans, and overcome initial resistance to using the strategies in daily teaching practices. (Contains 22 references.) (SLD)

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TEACHERS REFLECTING ON GLOBAL LEARNING STRATEGIES ACROSS CONTENT AREAS

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Teachers Reflecting on Global Learning Strategies Across Content Areas

By
Ana Gil and Virginia Labar

Abstract

Presently in the United States, educational reforms are targeting reading instruction as a means to improve the quality of educational delivery with the goal of making all students independent life-long learners. In fact, some states demand from higher education institutions that course work in reading instruction be a part of teacher preparation programs. I addition, some states require teachers to take reading across the content area courses in order to renew their teaching certificates. Maryland is one such state. This study examines a middle school that is using the *Strategic Teaching and Reading Project*, a nationally recognized research-based model as its reform program. This unit of analysis is located in Prince George's County, Maryland. In this qualitative experience, teachers were asked to reflect on their own teaching practices and experiences with the five global strategies of metacognition, prior knowledge, inference, word meaning, and text structure. For each strategy, an open-ended five-response instrument was designed an administered for five consecutive months. The instructional plan included teaching all five learning strategies in each content area while each department highlighted one learning strategy monthly on a rotating basis throughout the school year.

The *Strategic Teaching and Reading Project* assists teachers in becoming strategic facilitators of the learning process. Simultaneously, students gain the understanding of how to become life-long strategic learners by: thinking about their own thinking processes; recognizing what they know, their past experiences and feelings; increasing their knowledge of words and active vocabularies; examining the presentation of printed materials and purposefully producing their writing in a way that assists the reader; and developing critical thinking. The acquisition of these strategies carries across content areas. Not only do they transfer from class to class, these strategies transfer from one learning situation to another. Thus, students who engage in these strategies develop life-long strategic learning and thinking skills.

To this point, the findings reveal that teachers have become more effective on their teaching practices. They have reconsidered their ways of delivering course content, recognized their strengths and weaknesses, become increasingly cognizant of what, when, and how the five strategies can be implemented, developed a cognitive framework that outlines their lesson plans, and overcome initial resistance to using the strategies in their daily teaching practices.

The current trends in education seem to demand that teachers embrace the idea of the "reflective educator." Basically, what this means is that if a teacher wants to improve his professional practices, he must carefully examine the situation that is taking place in a given time, precisely study the options available analytically, and make conscious choices on how to act. A reflective teacher is aware that "taking time and energy to reflect on and improve one's work are essential to the understanding process itself" (Simmons, 1994, p.23). For this reason, planning time for reflection help a teacher have a better understanding about his/her own teaching. Under this capacity, teachers may realize the critical aspect of their own reflections. They may find that the reflection time is productive, if they take time to properly reflect. Brubacher, Case, and Reagan (1994) found, analyzing many research studies, that educators are more reactive than reflective. In fact teachers and schools seem to be trapped in a reactive cycle of "catching up", "putting out fires", and "being on roller skates trying to plug up leaks in the dike."

Killion & Todnem (1991) said that "busy people typically do not engage in reflection. They rarely treat themselves to reflective experiences unless they are given some time, some structure and the expectations to do so" (p.15). Teachers, too, are busy people. They depend on school policies, rules, and regulations that might procure time for reflection. Administrative support is a key element to support and

encourage teachers to trust, to be intellectually inquisitive, to share, to raise questions, to debate, to challenge, to provide mutual support, and to express doubts. School administrators must facilitate teachers the time to reflect and to try new actions based on these efforts. But, reflection is also an individual and internal process that depends on individual needs for becoming more effective, more objective, and more proficient in teaching practices.

We believe that reflecting on teaching takes place when a teacher knows his/her students well, their likes and dislikes, their ethnic and cultural background, their personalities, and respects and validates their languages and cultures. Also, a reflective teacher knows the resources available in the school, district, community, and the families of his/her students that she can access in order to improve and achieve the objectives of the educational program. A reflective teacher provides for a variety of engaging activities in which students can have many opportunities to learn by listening, speaking, reading, writing, and has hands-on experiences with the content being taught.

A reflective teacher must know the difference between teaching and learning, allow time for active teaching in their classrooms, use a repertoire of group arrangements to do class work that may go from lecturing, to small group discussions and projects, to individualized instruction. They use many learning strategies in their teaching, cooperative learning, multisensory and multiple intelligences classroom methodologies, as well as outside world learning activities such as field trips, museum visits, etc.

This study looks extensively at, first, some of the strategies that researchers have focused their attention upon, with the purpose of illustrating concretely what strategies might be helpful to middle and high school students and, secondly, the responses given by reflective teachers on how they are implementing these strategies into their daily lessons. But before addressing the strategies and teachers' reflections, it is important to consider some of the basic issues that make reading a critical concern at these educational levels. These issues are: (1) reading in content areas such as science, mathematics, and social studies demand skills beyond those used in the early grades; (2) students often lose interest in reading as they get older; (3) large number of secondary students are at risk of reading failure, and they require reading instruction that is targeted to their needs; and (4) secondary teachers have limited time for implementing reading strategies, unless such strategies can be incorporated into approaches for teaching curriculum.

Global Learning Strategies

Metacognition

In 1979, Flavell expanded his definition of metacognition. He said that metacognition is "that segment of your stored world knowledge that has to do with people as cognitive creatures and with their diverse cognitive tasks, goals, actions, and experiences" (p.906). In practical terms, a middle school student's believing that she learns better if she has music as a background when she is reading the text and she rewrites the information in her own words from her text. Others'definitions coincide that metacognition is having an understanding of one's knowledge by having a conscious control over this knowledge. It entails evaluating tasks before reading, paying attention to meaning during reading, and regulating throughout (Lipson and Wickizer,1989). In other words, metacognition is having control over your own thinking process, knowing when, how, and why to use the skills and knowledge that one's possesses. An example would be a high school student solving an algebra assignment and breaking into

pieces the information on when, how, and why to use specific math skills and prior knowledge he possesses. As Cross and Paris (1988) indicated "the monitoring and redirection of one's activities during the course of reading to reach the desired goals" (p.131).

Teachers can enhance **metacognition** in their students by:

- providing time for independent reading
- allowing students to select their own reading materials
- exposing students to a wide and rich range of literature
- modeling and discussing his/her own reading processes
- using strategies that activate their prior knowledge
- making and testing predictions
- permitting time for restructuring the task
- using contextual analysis for unfamiliar terms
- assisting students comprehension by identifying organization and structure of the text
- setting aside time for reflection on what was read
- asking for a summary of major ideas in the selection
- providing after reading applications

Inference

A general agreement among researchers define inferencing as:

- the process of judging, concluding, or reasoning from some given information (Anderson and Pearson, 1993)
- using reasoning skills to formulate conclusions from something that is known or assumed to be true (NCREL/STRP, 1993)
- the relationship between two terms, concepts, or ideas (Learning to Learn, 2001)
- convincing students that what they bring to the reading activity is more than what they encounter on the printed page (Egan, 1994)

Recent attempts at understanding the academic problems of students experiencing difficulties in reading comprehension led toward a close examination of what inferencing is and how the inferencing strategy works (Kurland, 2000). Hansen and Pearson (1983) said that inference making is part of the day-to-day experiences of all children, at all ages, for making sense of the world based on what they know and know how to do. When readers are engaged in basic literal comprehension type of text, they are inferring (Holmes, 1985). It is almost impossible to not create a picture of events in your mind. McNamara, Miller, and Bransford (1991) explained that our mind construct a representation of the events, places, situations, or layouts of what is in the text. Then the scenes from our mental movie starts operating in order to infer meaning.

Prior Knowledge

The *Strategic Teaching and Reading Project* defines prior knowledge as: a composite of who we are and what we know about content and about strategies we have learned from both our academic and everyday experiences"(STRP Manual, 1987). In other words, the background knowledge that a reader brings to the text. Prior knowledge is the content knowledge and personal experiences the reader brings

to the learning task (MCREL, 1998). Readers who have taken out and dusted off their prior knowledge can make more connections and learn more while they read. Those readers whose background knowledge is well developed and accessible remember more from their reading than readers whose prior knowledge of the topic is limited (Anthony and Raphael, 1989).

Tapping into prior knowledge supports schema theory (Pearson, 1987). The theory is about comprehending what one reads. In conjunction with the constructivist view of learning in which the reader interacts with text and context, the schema theory argues that the learner brings a different schema to the reading process due to different background experiences that he/she had been exposed to and confronted with. When a reader is getting ready to read, tapping into his/her prior knowledge constitutes a pre-reading strategy that leads into deeper understanding. Students learn and remember new information best when it is linked to relevant prior information. Teachers who link classroom activities and instruction to prior knowledge build on their students' familiarity with a topic and enable students to connect the curriculum content to their own culture and experience.

Word Meaning

Understanding word meanings, or vocabulary, is key to learning. When reading, understanding word meanings is important in the comprehension process. It is therefore key to learning new concepts and being able to comprehend text. Both students' expressive and receptive vocabularies must grow through direct instruction. In addition, strategies for independent learning must also be taught. Words must be learned in content areas. Learning words to help students through a piece of literature is less critical than assisting students in learning words in content area classes. This is so because students can use the context clues of the "story" to help them get through the book. In addition, they are less likely to interact with those specific words again. On the other hand, content area teachers must provide vocabulary instruction to students in order for them to comprehend key content information that is being presented in the text. Students comprehend newly presented concepts when they master key concept vocabulary. While vocabulary instruction may not significantly increase a student's overall performance in reading comprehension, direct vocabulary instruction can impact content area understanding (Nagy & Herman, 1984). Effective vocabulary instruction includes teaching aspects of word meaning simultaneously: (1) the meaning of specific words and (2) how to become independent vocabulary learners.

Text Structure

Text structure is defined as the arrangements of text. "Organization, or structural aspects, of text refers to the ordering of words in sentences and sentences in text, as well as rethorical and graphic devices that mark the functions of specific sentences and the organization of the text as a whole" (Goldman & Rakestraw, 2000). To understand the importance of text structure in literacy instruction, one must understand the two levels of text structure. The first is known as macrostructure, or general layout of the text. The second type of text structure is a subset of the macrostructure. It is call the microstructure. There are various microstructures, including: cause/effect, listing, enumeration, problem/solution, compare/contrast, sequence, and plot.

Readers must comprehend bot types of text structure. Macrostructure aids in recall of detailed information by making important information more memorable. Readers must internalize both types of text structure in order to function with a high level of literacy. Understanding the way text is organized

is an important element in a reader's ability to identify and retain important information. Research indicates that students who receive instruction in text structure generate summaries with better organization and more information than those who receive no instruction in text structure (Raphael, Kirschner, & Englert, 1986). In addition, another research team indicates that readers who are aware of the text structure will recall more from an expository passage than those who are unaware. Teachers must be trained to use text structure in recalling information (Moes, Foertsch, Dunning, Rogers, Seda-Satana, Benjamin, & Pearson, 1984). Other research studies have indicated that most learning from reading, both in and out of school depends on the ability to read and understand expository text (Ambruster, Anderson, & Ostertag, 1987). In the same line , they also indicated that middle grade children apparently have difficulty forming macrostructures for expository text. This lead educators to draw conclusion that students must learn to meaningfully use and create text structure.

Design Components

Site and Participant Description

Hyattsville Middle School is located inside of the Capital Beltway of the Washington, D.C. metroplex in Prince George's County, Maryland. The Washington Post reports the mobility rate at the school to be the highest in the country, approximately 46 percent. The students are culturally diverse. Students are bussed from various neighborhoods to the school. Hyattsville Middle School engaged in the Strategic Teaching and Reading Project during the 1999-2000 school year. The Prince George's County Public School system declared that all Challenge Schools, schools identified as having test scores that had dropped two years in a row, select a reform model. It was deemed that STRP was an affordable model that would help improve our two priority goals: reading, writing, language usage and mathematics Participants in this study include middle school classroom teachers who deliver instruction to students. The teachers' range in experience from first-year to twenty-seven years veterans. The levels of teacher certification held range from provisional to advanced professional. Over fifty percent of teachers in the study have fewer than five years teaching experiences.

Field Notes

As part of the further implementation of STRP, the Reading Specialist, who is responsible for overseeing STRP's progress and training, decided after the first year of implementation, that departments should focus instruction on one strategy per month on a rotating basis. During the month, each strategy would be used, however, one strategy would get particular emphasis. The reasoning was that students needed to hear the many different explanations of teachers and that students would benefit from hearing how each strategy works in all content areas. As a result, each department was to focus on instructing each STRP strategy at least once during the semester-long rotation. The following chart shows the schedule or rotation:

Month	Metacognition	Prior Knowledge	Text Structure	Inference	Word meaning
January	Social Studies	X Team	Mathematics	Science	Language Arts
February	Language Arts	Social Studies	X-Team	Mathematics	Science
March	Science	Language Arts	Social Studies	X-Team	Mathematics

April	Mathematics	Science	Language Arts	Social Studies	X-Team
May	Language Arts	Science	Social Studies	Mathematics	X-Team
June	X-Team	Mathematics	Science	Language Arts	Social Studies

After the first year and a half of STRP implementation, it was also decided that teachers needed to be given time to reflect upon their practice. The Reading Specialist created an instrument designed to be simple and concise so that teachers could quickly think about the core of teaching each of the five STRP strategies. The STRP guidebook was used as a model for creating the reflection sheets. The Reading Specialist used the questions that would let her know the degree that the strategies were being taught and what further staff development was needed.

Starting in February, the STRP Monthly Reflection Sheets were distributed during the monthly faculty meeting. They were then completed and returned to the reading specialist. When time permitted, the Monthly Reflection Sheets (MRS) were completed during the course of the meeting. Each month, the Reading Specialist collected the sheets, captured and collated the date, and finally returned the original Monthly Reflection Sheet to the appropriate teacher. It is important to mention that confidentiality was guaranteed to teachers participating. The MRS did not constitute a tool for the principal to evaluate teachers' performance. The summary sheets are all that the principal received.

The following table summarizes the questions for reflection included in the MRS. The forms instructed the subjects to take about 10 minutes to reflect on their own teaching practices of each strategy.

Metacognition	**Prior Knowledge**	**Word Meaning**	**Inference**	**Text Structure**
1. How and when do you provide guide practice of metacognition?	1. Describe how a lesson you prepared helped students link new information to their prior knowledge.	1. How do you teach student to associate new word meanings with background knowledge?	1. Analyze an inferential comprehension lesson that you used. What were the strengths.	1. How much time do you spend on explicit instruction, modeling, guided practice, and independent practice in the use of text structure?
2. How and when do you provide independent practice of metacognition?	2. How does activating students' prior knowledge help students who experience comprehension problems?	2. How do you encourage active participation by students in defining words?	2. Analyze an inferential comprehension lesson that you used. What were the weaknesses?	2. If you need to spend more time in any of these areas, explain what will you do.

3. Where do you integrate metacognitive strategies with instructional goals and students' background knowledge?	3. How often do I activate and/or build my students' prior knowledge?	3. What do you do to promote independent learning of vocabulary acquisition?	3. What questions do you have about teaching inference?	3. Discuss how you know students are ready for individual work using text structure.
4. How do you address metacognition before, during, and after reading?	4. How can I more effectively activate my students' prior knowledge?	4. Describe one effective strategy that you used to instruct word meaning.	4. What help would you like?	4. What do you do for those student who find reading material too difficult to read and cannot analyze organizational text structure?
5. From your analysis, assess your strengths and weaknesses in your instruction of comprehension.	5. Identify a problem you feel you have in teaching the prior knowledge strategy to you students?	5. What would you still like to accomplish in your instruction of word meaning?	5. What more do you need to know about inference in order to help students with their comprehension?	5. What did you find most difficult about teaching text structure? Is there anything with which you would like help?

Global Findings

Teachers' responses indicated varying degrees of proficiency in teaching the STRP comprehension strategies. Moreover, the responses indicated that only a few teachers had developed specific techniques for delivering strategy instruction. The responses also showed that the majority of teachers were trying to use the strategies in the classroom. Some responses indicated that teachers knew they were teaching the strategy effectively or that they needed additional training on a particular strategy.

> *"Interrupted reading for clarity or summarization"*
> *"I provided guided practice of metacognition, prior to implementing a cooperative learning experience such as a lab"*
> *"Modeling"*

The teachers responses indicated breadth and depth in relation to their use and understanding of the application of prior knowledge in the classroom. Teachers mentioned a number of ways in which using prior knowledge is a part of daily lessons and procedures. Furthermore, prior knowledge relating to content, experiences, and real-world experiences was mentioned. However, only a couple of responses showed particular techniques other than questioning; and, no responses specifically discussed using attitudes about prior experiences as a part of prior knowledge. Follow some excerpts of teachers' experiences across content areas.

The responses given regarding text structure refer specifically to the macrostructure of text. Teachers

> *"Using musical terms and symbols used earlier in the year helped my students learn a new song in Hebrew."*
> *"Using knowledge of a restaurant to create scenarios"*
> *"We read an article in USA Today and before the students associate everything they know with Alaska since*

were trained at the school only on macrostructure. Language Arts teachers who attended a summer institute were exposed to microstructure. However, the Language Arts Department was not represented in this portion of the study.

> *"I spend time at the beginning of the year. What I do is give reminders or a quick review"*
> *"Students were able to independently extract problems from a passage"*
> *"I give students several questions to answer asking them to pay close attention to the sub-headings in answering all questions"*

Teachers are providing a number of strategies for learning words in all content areas. Their responses revealed that more training in word meaning would assist them in planning effective strategies to teach students in the classroom.

> *"Students put a check next to the words they think they know"*
> *"Dissecting words to determine the definition of the word part"*
> *"Write weekly vocabulary list for future interactions"*

Teachers proved that the inferencing strategy is still "the Cinderella" of their lessons. They are having trouble with delivering and instructing students in the use of inferences. The data revealed the existence of academic problems in the process of judging, concluding, or reasoning from some give information. Teachers' responses reflected that inference making is not part of the day-to-day classroom experiences. However, they recognize that we cannot avoid to infer from text.

> *"Looking at the lyrics of a Hebrew song and trying to infer what the real meaning is. Liste to the melody, reading translation, and trying to imagine who would sign or have written. Eye opening experience. Students found a new likeness to a new type of music"*
> *"Inference assisted students in interpreting data from graphs and charts, estimation, and solving word problems"*

Recommendations for Teachers

- Teachers would benefit from sharing their classroom practice with one another. More exposure to examples of how students' metacognition can be successfully guided.

- Additional ways of activating prior knowledge would expand teachers' repertoire of assisting students to link old and new knowledge. Teachers need to compile ideas, share them, and demonstrate unfamiliar activities to assist other teachers.

- More training is demanded in word meaning instruction. Teachers should augment their techniques for teaching word meaning in order to have students become independent learners. They will come closer to achieving their instructional goals of word meaning if they continue working on the strategy across all content areas and allow students to learn how their metacognition helps orchestrate vocabulary acquisition, retention, and use.

- With more focus on the strategy of inference, students will develop and increase proficiency. Teachers could provide inferential questions that require written responses. This would provide more practice for them. In addition, students could generate inferential questions for one another. This will allow students another pathway of thinking about inference. Across the content areas teachers, basically, require more assistance with teaching the concept of inference and additional training in the strategy.

- Further staff development is needed in text structure so that all teachers can include the microstructure of text in comprehension and production of text. Teachers should monitor students' oral and written feedback regarding text structure. In addition, teachers would focus on text structure by having students demonstrate the ability to produce effective text structure (macrostructure) in projects and in daily writing (microstructure).

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